

# “Innovation competition and merger policy: New? Not sure. Robust? Not quite!”

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## ABSTRACT

Cet éditorial offre un éclairage critique sur la théorie d'atteinte significative à l'innovation effective déployée par la Commission européenne dans sa décision autorisant l'opération de concentration *Dow/DuPont* en 2017.

In this short piece, I critically discuss the development of harm to innovation as a theory of anticompetitive harm in EU merger policy, following the conditional approval of the *Dow/DuPont* in 2017.

In the last few years, the European Commission's (the "Commission") assessment of horizontal mergers has been increasingly focused on innovation competition, particularly in mergers involving R&D intensive markets. In this context, the Commission's decision in *Dow/DuPont* of March 2017 continues to be the subject of much debate almost a year after its adoption (Case COMP/M.7932 *Dow/DuPont*, para. 3297, available at [http://ec.europa.eu/competition/mergers/cases/decisions/m7932\\_13668\\_3.pdf](http://ec.europa.eu/competition/mergers/cases/decisions/m7932_13668_3.pdf)). The gist of this controversy consists in understanding whether the Commission has, in this case, intervened on the basis of a "*novel*" economic theory of harm in support of its finding that the merger created a risk of a significant impediment to effective innovation competition ("SIEIC").

From a legal standpoint, the root cause of the controversy is one of process. Introducing new theories of harm during merger review is akin to experimenting with new surgical techniques ... without peer validation (and anaesthesia). This line of critique does not preclude the Commission from changing merger policy. Instead, it suggests that it is malpractice to introduce new policy on the job. Policy changes should follow an open process of "*falsification*," so one can be sure that they are based on sound economic theory, backed by empirical evidence. This approach has been adopted time and time again in the past by the Commission. The debate that took place on minority shareholdings is a case in point.

From an economics perspective, the stir is more foundational. The theoretical relationship between firm size, market structure and innovation remains unsettled since Joseph Schumpeter and Kenneth Arrow (J. Schumpeter, *Capitalism, Socialism and Democracy* (1942); K. J. Arrow, Economic Welfare and the Allocation of Resources for Invention, in *The Rate and Direction of Inventive Activity: Economic and Social Factors* (NBER, 1962), pp. 609–626). Admittedly, some common ground was found around the idea that innovation thrives with contestability, appropriability and synergies (C. Shapiro: Competition and Innovation. Did Arrow Hit the Bull's Eye?, in J. Lerner and S. Stern, *The Rate and Direction of Inventive Activity Revisited*, 2012, pp. 361–410). However, those "*unifying*" economic principles—which denote that the relationship between concentration and innovation is essentially an empirical question—were called into question after *Dow/DuPont* when the Commission's chief economist declared—albeit in a personal capacity—that his team had developed a new model that showed that post-merger, the parties "*always*" decreased their innovation efforts (see EU merger control and innovation, *Competition policy brief*, 2016–01, April 2016, available at [http://ec.europa.eu/competition/publications/cpb/2016/2016\\_001\\_en.pdf](http://ec.europa.eu/competition/publications/cpb/2016/2016_001_en.pdf); G. Federico, G. Langus and T. Valletti, A Simple Model of Mergers and Innovation, *Economics Letters*, Vol. 157(C) (2017), pp. 136–140). Meanwhile, official statements from the Commission kept stressing that its assessment of innovation competition in *Dow/DuPont* belonged within ordinary garden variety unilateral effects analysis (*Dow/DuPont* innovation concerns 'not novel', EU insists, *MLex Insight, Competition merger brief*, Issue 2/2017, July, European Commission).

The official publication of the redacted version of the *Dow/DuPont* decision in late 2017 provides a unique opportunity to check whether the early concerns voiced by legal and economic practitioners were indeed valid. On close reading, it seems that *Dow/DuPont*'s SIEIC analysis marks a small but significant change to the Commission's merger policy in relation to innovation competition (I.). At the same time, however, the economic model of unilateral effects underpinning SIEIC is based on several critical

assumptions which are not robust for innovation competition (II.).

## SIEIC: A small but significant change?

The Commission has traditionally examined the impact of mergers on innovation competition. Many cases in the pharmaceutical, chemical, industrial and financial sectors have been remedied on the grounds of a post-merger risk of decreased incentives to innovate. However, *Dow/DuPont* strays from previous EU merger practice on three points.

To start with, SIEIC extends the application of the standard unilateral effects model, which was previously used to assess pricing effects, to the assessment of innovation competition. *Dow/DuPont* is indeed the first case where the Commission explicitly relies on the unilateral effects framework in relation to innovation competition. In particular, SIEIC can be distinguished from the theory of "*cannibalisation*" developed earlier in *Novartis/GSK Oncology* (Case COMP M.7275 *Novartis/GlaxoSmithKline Oncology Business*, available at [http://ec.europa.eu/competition/mergers/cases/decisions/m7275\\_20150128\\_20212\\_4158734\\_EN.pdf](http://ec.europa.eu/competition/mergers/cases/decisions/m7275_20150128_20212_4158734_EN.pdf)). In this case, the Commission's cannibalisation concerns related to clearly identified existing products. In contrast, the SIEIC theory developed in *Dow/DuPont* is "*broader*" since the harm to innovation applies to future products. (Ibid., para. 2108: "(...) *cannibalisation is often meant to refer to a diversion of sales from one or several existing products to an innovative product sold by the same firm. Innovation competition, instead, more broadly refers to the extent to which innovative products of one firm may divert sales and profits from both existing and other innovative future products of rival firms. (...) 'The Commission notes that its theory of harm rests on the broader notion of innovation competition rather than on the notion of cannibalisation.'*")

The second change brought about by SIEIC is that it dispenses with the delineation of relevant markets. Instead, *Dow/DuPont* looks at competition in "*innovation spaces*," understood as "*the discovery targets*" over which firms compete (Case COMP/M.7932, *Dow/DuPont*, op. cit., para. 2168. The R&D undertaken in innovation spaces "*generate[s] early pipeline products*" (para. 2159)). This feature of SIEIC is unprecedented. In all merger cases involving the pharmaceutical and crop protection sectors that preceded *Dow/DuPont*, the Commission had focused its assessment of innovation competition on existing and pipeline products. The shift in analytical framework seen in *Dow/DuPont* seems to expand the scope of the merger review to early stage R&D efforts, where products are several years away from reaching the market (for an early formulation of this point in a US context, see D. Wald and D. Feinstein, Merger Enforcement in Innovation Markets, *Antitrust Source* (2004) 1–11. In recent years, the Commission has increasingly taken into account early stage pipeline products in its merger reviews. This is reflected in a number of cases in the pharmaceutical sector where the Commission's approach has diverged from its traditional method of focusing on phase III pipeline products. See for example *Novartis/GlaxoSmithKline Oncology Business*, op. cit., and Case COMP M.8041 *J&J/Actelion*, available at [http://ec.europa.eu/competition/mergers/cases/decisions/m8401\\_740\\_3.pdf](http://ec.europa.eu/competition/mergers/cases/decisions/m8401_740_3.pdf)).

Third, *Dow/DuPont* clarifies that the competitive harm envisaged in an SIEIC is a scenario of exit by one of the merging parties from an innovation space. The decision repeatedly talks of an immediate post-merger "*discontinuation, deferment or redirection of*

*competing lines of research and early pipeline products.”* Admittedly, the idea of post-merger exit from lines of research and early pipeline products is not entirely new. For example, in *GE/Alstom*, the Commission found that GE had planned to discontinue parts of Alstom’s 50 Hz turbines product offering and related R&D capabilities. However, in *GE/Alstom*, the Commission had specifically identified the products and related activities that the merged entity was likely to shut down. In contrast, in *Dow/DuPont*, the Commission concluded that the merger would give rise to an SIEIC even though it conceded that it “*may not be able to identify precisely which early pipeline products or lines of research the parties would likely discontinue.*”

Taken together, those three inflections from previous practice denote a policy change. It may not be a “*quantum leap*,” true (see, for an early suggestion to that effect, N. Petit, Significant Impediment to Industry Innovation: A Novel Theory of Harm in EU Merger Control? February 4, 2017, available at SSRN: <https://ssrn.com/abstract=2911597> Readers of that previous paper are asked to forgive me for use of the expression “quantum leap”. At the time the Dow/DuPont decision had not been published. Given the modest numbers of downloads achieved by that earlier paper, I assume that its impact was insignificant). But it surely is not “*business as usual*.”

## Is unilateral effects theory robust for innovation competition?

SIEIC predicts the exit of the merged firm from innovation spaces. The mechanics of exit from innovation spaces are similar to standard unilateral effects in price. As is well understood, in a merger between two close competitors X and Y, firm X will internalise the adverse effects on sales of price competition on firm Y. Hence, X has lower incentives to engage in price competition post-merger, and thus the merger gives rise to a significant impediment to effective competition. In an innovation setting, the assessment simply shifts its focus from post-merger price competition to R&D investments. X will internalise the adverse effects on (future) sales of R&D competition on firm Y. With reduced post-merger profits from innovation, X has lower incentives to engage in R&D competition, and the merger gives rise to an SIEIC.

But can one substitute price with R&D in the standard unilateral effects framework without further adjustments to the model? Put differently, are the critical assumptions of a standard unilateral effects model involving price effects robust when non-pricing decisions, and in particular R&D decisions, are considered? Three factors are relevant.

– First, while prices and output can—to some extent—be adjusted in the short term, firms are unable to discontinue R&D programmes at the flick of a switch. This is because R&D capital is essentially composed of sunk and specific assets. In addition, the labour component of R&D programmes creates rigidity (besides labour market regulation, there may be industry-specific factors that create a need to retain scientists in pharmaceutical companies to oversee the registration and regulatory approval process). Moreover, strategic considerations, such as maintaining an R&D programme for defensive patenting purposes, may come into play. All this suggests that R&D programmes create exit barriers, much like fixed capacity, long-term contracts, etc.

– Second, even in the alternative exit scenario of a post-merger redirection of R&D programmes, it is not a given that an adverse impact on welfare will ensue. The welfare costs of reduced competition within one innovation space may

well be outweighed by the welfare benefits brought about by the increased coordination ability of the merged entity to deploy its R&D resources across a higher number of innovation spaces. And while it is true that this empirical question cannot be answered in the abstract, this does not justify ignoring it entirely in the context of an SIEIC analysis.

– Third, SIEIC assumes away entirely the possibility that there may be post-merger intra-firm R&D competition in a same innovation space on account of the merged firms’ organisational structure. This, in turn, is a limitation of SIEIC because firms’ R&D structures are heterogeneous. There are varying degrees of centralisation both in terms of organisation structure—e.g., corporate-level v. business unit-level R&D labs—and decision-making for R&D funding—e.g., headquarter vetted v. business unit vetted R&D budgets (N. Agyres and B. Silverman, R&D, organization structure, and the development of corporate technological knowledge, *Strategic Management Journal*, Vol. 25, Issue 8–9 (2004), p. 930). For example, DuPont is often cited as an example of the decentralised R&D model where research is conducted at the divisional level or within business units (ibid.). In practice, an assessment of innovation competition should thus examine the merging parties’ post-closing organisation plans.

With this background, it is clear that while intuitively appealing, the current formulation of SIEIC is incomplete. SIEIC pays no heed to several critical issues, such as the structural rigidity of R&D resources, the counterbalancing effect of intra-firm coordination across innovation spaces, or the organisational structure of R&D in a merged firm. Taken together, these factors can plausibly decrease the opportunity cost of innovation as well as outweigh the internalised cost of innovation cannibalisation. Short of their consideration, SIEIC remains a fragile basis for merger remediation.

## Conclusion

In a “*forgotten paragraph*” of *Tetra Laval* (Case C-12/03 P, *Commission v. Tetra Laval*, [2005] ECR I 987, para. 328, available at <http://curia.europa.eu/juris/showPdf.jsf?text=&docid=49926&pageIndex=0&doclang=en&mode=lst&dir=&occ=first&part=1&cid=630078>; M. Jaeger, The Standard of Review in Competition Cases Involving Complex Economic Assessments: Towards the Marginalisation of the Marginal Review?, *Journal of European Competition Law & Practice* Vol. 2, No. 4 (2011), pp. 295–314), the Court of Justice of the EU has required the EU Commission to discharge a “*burden of persuasion*” in relation to complex economic analysis (this expression was coined by I. Liannos and C. Genakos, Econometric evidence in EU competition law: an empirical and theoretical analysis, in I. Lianos and D. Geradin (eds.), *Handbook on European Competition Law: Enforcement and Procedure*, Edward Elgar Publishing (2013)). Arguably, SIEIC falls within this category. Future cases will tell us if SIEIC can survive the test of accuracy, reliability, consistency and completeness required by the case law. Without prejudging on forthcoming improvements in merger analysis, a close reading of *Dow/DuPont* suggests, however, that in current formulation, SIEIC theory is too crude to produce empirical findings in relation to innovation competition (for more on the above, a comprehensive study of those issues can be found at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3113077](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3113077)). ■